

CLAIMS:

What is claimed is:

1 1. A method in a data processing system included within an
2 oscilloscope for independently analyzing a signal input into
3 said oscilloscope, said oscilloscope including a plurality
4 of triggering modes, said method comprising the steps of:

5
6 specifying a plurality of trigger parameters for each
7 of said plurality of triggering modes; and

8
9 thereafter, said oscilloscope automatically analyzing
10 said input signal independently from any user input
11 utilizing each of said plurality of triggering modes and
12 said plurality of trigger parameters specified for each of
13 said plurality of triggering modes.

1 2. The method according to claim 1, said input signal
2 including a desired waveform and a plurality of undesired
3 waveforms, and further comprising the steps of:

4 during said step of automatically analyzing,
5 determining if said oscilloscope triggered on one of said
6 plurality of undesired waveforms; and

7 in response to a determination that said oscilloscope
8 triggered on one of said plurality of undesired waveforms,
9 storing said one of said plurality of undesired waveforms.

1 3. The method according to claim 2, further comprising the
2 step of storing a plurality of trigger parameters associated
3 with one of said plurality of triggering modes utilized when
4 said oscilloscope triggered on said one of said plurality of
5 undesired waveforms.

1 4. The method according to claim 3, wherein said step of
2 automatically analyzing further comprises the steps of:

3 analyzing said input signal utilizing a first of said
4 plurality of triggering modes and a first plurality of
5 trigger parameters associated with said first of said
6 plurality of triggering modes; and

7 thereafter, automatically continuing said analyzing
8 said input signal independently from any user input
9 utilizing a second of said plurality of triggering modes and
10 a second plurality of trigger parameters associated with
11 said second of said plurality of triggering modes.

1 5. The method according to claim 4, further comprising the
2 steps of:

3 establishing said first plurality of parameters
4 including a start voltage level, a stop voltage level, a
5 voltage step, and a sweep rate; and

6 said oscilloscope attempting to trigger on any of said
7 plurality of undesired waveforms utilizing said a current
8 voltage equal to said start voltage level and utilizing said
9 sweep rate.

1 6. The method according to claim 5, further comprising the
2 steps of:

3 while said oscilloscope is attempting to trigger,
4 determining an elapsed time;

5 determining if said elapsed time is greater than said
6 sweep rate;

7 in response to said elapsed time being greater than
8 said sweep rate, incrementing said current voltage by said
9 voltage step; and

10 said oscilloscope attempting to trigger on any of said
11 plurality of undesired waveforms utilizing said current
12 voltage and said sweep rate.

1 7. The method according to claim 6, further comprising the
2 step of in response to said current voltage being equal to
3 said stop voltage, automatically continuing said analyzing
4 said input signal utilizing said second of said plurality of
5 triggering modes and said second plurality of trigger
6 parameters associated with said second of said plurality of
7 triggering modes.

1 8. The method according to claim 7, further comprising the
2 steps of

3 prioritizing said plurality of trigger modes; and

4 establishing a highest priority of said plurality of
5 trigger modes as said first of said plurality of said
6 triggering modes.

1 9. The method according to claim 8, further comprising the
2 step of establishing a next highest priority of said
3 plurality of trigger modes as said second of said plurality
4 of said triggering modes.

1 10. The method according to claim 9, wherein said plurality
2 of triggering modes includes an edge triggering mode.

1 11. The method according to claim 10, wherein said
2 plurality of triggering modes includes a slew triggering
3 mode.

1 12. The method according to claim 11, wherein said
2 plurality of triggering modes includes a runt triggering
3 mode.

1 13. The method according to claim 12, wherein said
2 plurality of triggering modes includes a glitch triggering
3 mode.

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1 14. A data processing system included within an
2 oscilloscope for independently analyzing a signal input into
3 said oscilloscope, said oscilloscope including a plurality
4 of triggering modes, comprising:

5 means for specifying a plurality of trigger parameters
6 for each of said plurality of triggering modes; and

7 means for thereafter, said oscilloscope automatically
8 analyzing said input signal independently from any user
9 input sequentially utilizing each of said plurality of
10 triggering modes and said plurality of trigger parameters
11 specified for each of said plurality of triggering modes.

1 15. The system according to claim 14, said input signal
2 including a desired input signal and a plurality of
3 undesired waveforms, and further comprising:

4 means for during said step of automatically analyzing,
5 determining if said oscilloscope triggered on one of said
6 plurality of undesired waveforms; and

7 means responsive to a determination that said
8 oscilloscope triggered on one of said plurality of undesired
9 waveforms, for storing said one of said plurality of
10 undesired waveforms.

1 16. The system according to claim 15, further comprising
2 means for storing a plurality of trigger parameters
3 associated with one of said plurality of triggering modes
4 utilized when said oscilloscope triggered on said one of
5 said plurality of undesired waveforms.

1 17. The system according to claim 16, wherein said means
2 for automatically analyzing further comprises:

3 means for analyzing said input signal utilizing a first
4 of said plurality of triggering modes and a first plurality
5 of trigger parameters associated with said first of said
6 plurality of triggering modes; and

7 means for thereafter, automatically continuing said
8 analyzing said input signal independently from any user
9 input utilizing a second of said plurality of triggering
10 modes and a second plurality of trigger parameters
11 associated with said second of said plurality of triggering
12 modes.

1 18. The system according to claim 17, further comprising:

2 means for establishing said first plurality of
3 parameters including a start voltage level, a stop voltage
4 level, a voltage step, and a sweep rate; and

5 means for said oscilloscope attempting to trigger on
6 any of said plurality of undesired waveforms utilizing said
7 a current voltage equal to said start voltage level and
8 utilizing said sweep rate.

1 19. The system according to claim 18, further comprising:

2 means for while said oscilloscope is attempting to
3 trigger, determining an elapsed time;

4 means for determining if said elapsed time is greater
5 than said sweep rate;

6 means responsive to said elapsed time being greater
7 than said sweep rate, for incrementing said current voltage
8 by said voltage step; and

9 means for said oscilloscope attempting to trigger on
10 any of said plurality of undesired waveforms utilizing said
11 current voltage and said sweep rate.

12 20. The system according to claim 19, further comprising
13 means responsive to said current voltage being equal to said
14 stop voltage, for automatically continuing said analyzing
15 said input signal utilizing said second of said plurality of
16 triggering modes and said second plurality of trigger
17 parameters associated with said second of said plurality of
triggering modes.

1 21. The system according to claim 20, further comprising:

2 means for prioritizing said plurality of trigger modes;
3 and

4 means for establishing a highest priority of said
5 plurality of trigger modes as said first of said plurality
6 of said triggering modes.

1 22. The system according to claim 21, further comprising
2 means for establishing a next highest priority of said
3 plurality of trigger modes as said second of said plurality
4 of said triggering modes.

1 23. The system according to claim 22, wherein said
2 plurality of triggering modes includes an edge triggering
3 mode.

1 24. The system according to claim 23, wherein said
2 plurality of triggering modes includes a slew triggering
3 mode.

1 25. The system according to claim 24, wherein said
2 plurality of triggering modes includes a runt triggering
3 mode.

1 26. The system according to claim 25, wherein said
2 plurality of triggering modes includes a glitch triggering
3 mode.

1 27. A computer program product for permitting an
2 oscilloscope to independently analyze a signal input into
3 said oscilloscope, said oscilloscope including a plurality
4 of triggering modes, said computer program product
5 comprising:

6 storage means;

7 instruction means embodied within said storage means
8 for specifying a plurality of trigger parameters for each of
9 said plurality of triggering modes; and

10 instruction means embodied within said storage means
11 for thereafter, said oscilloscope automatically analyzing
12 said input signal independently from any user input
13 sequentially utilizing each of said plurality of triggering
14 modes and said plurality of trigger parameters specified for
15 each of said plurality of triggering modes.

1 28. The computer program product according to claim 27,
2 said input signal including a desired input signal and a
3 plurality of undesired waveforms, and further comprising:

4 instruction means embodied within said storage means
5 for during said step of automatically analyzing, determining
6 if said oscilloscope triggered on one of said plurality of
7 undesired waveforms; and

8 instruction means embodied within said storage means
9 responsive to a determination that said oscilloscope
10 triggered on one of said plurality of undesired waveforms,
11 for storing said one of said plurality of undesired
12 waveforms.

1 29. The computer program product according to claim 28,
2 further comprising instruction means embodied within said
3 storage means for storing a plurality of trigger parameters
4 associated with one of said plurality of triggering modes
5 utilized when said oscilloscope triggered on said one of
6 said plurality of undesired waveforms.

1 30. The computer program product according to claim 29,
2 wherein said instruction means for automatically analyzing
3 further comprises:

4 instruction means embodied within said storage means
5 for analyzing said input signal utilizing a first of said
6 plurality of triggering modes and a first plurality of
7 trigger parameters associated with said first of said
8 plurality of triggering modes; and

9 instruction means embodied within said storage means
10 for thereafter, automatically continuing said analyzing said
11 input signal independently from any user input utilizing a
12 second of said plurality of triggering modes and a second
13 plurality of trigger parameters associated with said second
14 of said plurality of triggering modes.

1 31. The computer program product according to claim 30,
2 further comprising:

3 instruction means embodied within said storage means
4 for establishing said first plurality of parameters
5 including a start voltage level, a stop voltage level, a
6 voltage step, and a sweep rate; and

7 instruction means embodied within said storage means
8 for said oscilloscope attempting to trigger on any of said
9 plurality of undesired waveforms utilizing said a current
10 voltage equal to said start voltage level and utilizing said
11 sweep rate.

1 32. The computer program product according to claim 31,
2 further comprising:

3 instruction means embodied within said storage means
4 for while said oscilloscope is attempting to trigger,
5 determining an elapsed time;

6 instruction means embodied within said storage means
7 for determining if said elapsed time is greater than said
8 sweep rate;

9 instruction means embodied within said storage means
10 responsive to said elapsed time being greater than said
11 sweep rate, for incrementing said current voltage by said
12 voltage step; and

13 instruction means embodied within said storage means
14 for said oscilloscope attempting to trigger on any of said
15 plurality of undesired waveforms utilizing said current
16 voltage and said sweep rate.

1 33. The computer program product according to claim 32,
2 further comprising instruction means embodied within said
3 storage means responsive to said current voltage being equal
4 to said stop voltage, for automatically continuing said
5 analyzing said input signal utilizing said second of said
6 plurality of triggering modes and said second plurality of
7 trigger parameters associated with said second of said
8 plurality of triggering modes.

1 34. The computer program product according to claim 33,
2 further comprising:

3 instruction means embodied within said storage means
4 for prioritizing said plurality of trigger modes; and

5 instruction means embodied within said storage means
6 for establishing a highest priority of said plurality of
7 trigger modes as said first of said plurality of said
8 triggering modes.

1 35. The computer program product according to claim 34,
2 further comprising instruction means embodied within said
3 storage means for establishing a next highest priority of
4 said plurality of trigger modes as said second of said
5 plurality of said triggering modes.

1 36. The computer program product according to claim 35,
2 wherein said plurality of triggering modes includes an edge
3 triggering mode.

1 37. The computer program product according to claim 36,
2 wherein said plurality of triggering modes includes a slew
3 triggering mode.

1 38. The computer program product according to claim 37,
2 wherein said plurality of triggering modes includes a runt
3 triggering mode.

1 39. The computer program product according to claim 38,
2 wherein said plurality of triggering modes includes a glitch
3 triggering mode.

1 40. The computer program product according to claim 39,
2 wherein said storage means is a random access memory.

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